

CLAIMS

1. An antenna means for transmitting and/or receiving RF signals in at least a first frequency band, comprising:

- 5 - a ground plane means (20) arranged to be connected to ground of a circuitry of a radio communication device,
- a conductive radiating structure (10) having a first end (12) and a second end (14),
- said conductive radiating structure (10) is arranged separated from the ground plane means (20), characterised in that
- said conductive radiating structure is formed as at least a first elongated open loop,
- said first end (12) is arranged to be connected to ground of said radio communication device, and
- 15 - a feed portion is arranged in vicinity of the first and/or second ends.

2. The antenna means according to claim 1, characterised in that said second end being a feed portion.

20 3. The antenna means according to claim 1 or 2, characterised in that said conductive radiating structure (10) having a total length of $\lambda/4-\lambda$ at a frequency in the frequency band to be received and/or transmitted by the antenna.

25 4. The antenna means according to any of the claims 1-3, characterised in that said conductive radiating structure (10) being a flexible film attached to a dielectric substrate.

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5. The antenna means according to any of the claims 1-4, characterised in that said conductive radiating structure (10) exhibits at least a planar section, said planar section forming an angle (α) with said ground plane means, where (α) is in the range of 30-150°.

6. The antenna means according to claim 5, characterised in that a surface of said conductive radiating structure (10) being curved or folded such as to include C-shapes or V-shapes.

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10. 7. The antenna means according to any of the preceding claims, characterised in that said conductive radiating structure (10) being meander shaped.

15. 8. The antenna means according to any of the preceding claims, characterised in that it further comprises a tuning/matching means (16) for tuning/matching to one or multiple frequencies.

20. 9. The antenna means according to claim 8, characterised in that said tuning/matching means (16) is an electrical conductor having a first end and a second end, where said first end being arranged to said at least one elongated open loop, said second end being a free end and at least a part of at least one side of said conductor is capacitively coupled to said at least one elongated open loop.

25. 10. The antenna means according to claim 9, characterised in that said electrical conductor (16) being meander shaped.

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30. 11. The antenna means according to any of the preceding claims, characterised in that it further comprises at least one bridge connector (18) being an electrical conductor with a first end and a second end, each connected to different parts of said at least one elongated open loop.

12. The antenna means according to claim 11, characterised in that a side of said bridge connector (18) is capacitively and inductively coupled to a side of a first elongated open loop in said conductive radiating structure (10).

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13. The antenna means according to claim 11 or 12, characterised in that said tuning/matching means (16) is arranged close to said bridge connector (18) for forming a capacitive and inductive coupling therebetween.

10 14. The antenna means according to claim 11-13, characterised in that said bridge connector (18) is meander shaped.

15 15. The antenna means according to any of the preceding claims, characterised in that the first end of the conductive radiating structure (10) is coupled to ground.

20 16. An antenna assembly including an antenna means (1) according to any preceding claim, wherein the assembly comprises at least one further antenna element for transmitting/receiving radio frequency signals, for instance, a GPS antenna.